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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,353	04/13/2004	Phillip C. Watts	028058-000110US	4721
20350 7590 12/21/2010 TOWNSEND AND TOWNSEND AND CREW, LLP TWO EMBARCADERO CENTER EIGHTH FLOOR SAN FRANCISCO, CA 94111-3834				
EXAMINER				
MOWLA, GOLAM				
ART UNIT		PAPER NUMBER		
1723				
MAIL DATE		DELIVERY MODE		
12/21/2010		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/823,353

**Applicant(s)**

WATTS, PHILLIP C.

**Examiner**

GOLAM MOWLA

**Art Unit**

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 November 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 8-22 and 24-38 is/are pending in the application.
- 4a) Of the above claim(s) 17-22 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 8-16 and 24-38 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-840)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB-08)  
Paper No(s)/Mail Date 12/08/2010
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **FINAL ACTION**

### **Response to Amendment**

1. Applicant's amendment of 11/03/2010 does not place the Application in condition for allowance.
2. Claims 8-22 and 24-38 are currently pending. Applicant has amended claims 8 and 27, and cancelled claims 1-7 and 23. Claims 17-22 are withdrawn from consideration as being part of non-elected invention.

### **Status of the Objections or Rejections**

3. Due to Applicant's amendment of claim 8, all rejections from the office Action dated 08/04/2010 are withdrawn. However, upon further consideration, a new ground of rejection is presented below.

### **Claim Rejections - 35 USC § 112**

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 8-16 and 24-38 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the

relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 8 recites the limitations “the first thermal module comprises a first **substantially rigid** block including a first passage through which first passage the first fluid flows through the block” and “each of the plurality of second thermal modules comprises a respective **substantially rigid** second block including a respective second passage through which second passage the second fluid flows through the respective second block”, which are not supported by the original disclosure as filed. Instant application as originally filed fails to disclose anything as to whether the first and second blocks are **substantially rigid**.

#### **Response to Arguments**

6. Applicant's arguments with respect to claims 8-16 and 24-38 have been considered but are moot in view of the new ground(s) of rejection as necessitated by the amendments.

Applicant's arguments with respect to 102 and/or 103 rejections are moot in view of withdrawal of the rejections.

Applicant argues that the specification implicitly supports that the blocks are substantially rigid (see Remarks, page 13).

The Examiner respectfully disagrees. Instant application as originally filed fails to disclose anything as to whether the first and second blocks are **substantially rigid**.

On page 14 of Remarks, Applicant argues that that if the blocks of the Applicant's claims were not rigid, then there would be no need for bifurcation of the second thermal modules shown in figure 1 and described in [0010].

The examiner respectfully disagrees. Just because the second thermal module is bifurcated, that does not imply that the second thermal module is rigid. One skilled in the art realizes that any flexible block can as well be bifurcated to make two separate portions.

Applicant also pointed out that when the thermal modules are compliant and not rigid, the thermal modules needs to be pressed in order to assure good contact (see Remarks, page 14). Claim 9 explicitly mentions the need for compression in order to accommodate good contact between the thermal modules, which contradicts applicant's argument and implies that the blocks are flexible, not rigid.

Also, the specification does not provide support for "substantially rigid" limitation because the claim requires both the first (reference character 7 as shown in figs. 1 and 2) and second blocks (reference characters 1 and 3 as shown in figs. 1 and 2) to be "substantially rigid". Instant specification only shows one of the cold blocks (reference character 3 as shown in figs. 1 and 2) is bifurcated, not the remaining cold block (reference character 1 as shown in figs. 1 and 2) and also not the hot block (reference character 7 as shown in figs. 1 and 2).

On page 15 of Remarks, Applicant also argues that the performance of the thermoelectric generator depends on efficient heat transfer between the thermoelectric modules and the fluids flowing through the blocks, which implies that the blocks are made of a material with high thermal conductivity, such as a metal, and therefore the blocks are rigid.

The examiner respectfully disagrees. DeBucs (US 3,607,444) teaches that the blocks can be formed of metal such as spring steel, which is flexible (col. 4, lines 50-75).

On page 15 of Remarks, Applicant also argues that Applicant's O-ring 2 (as numbered in original Figure 2) is sandwiched between two of the second thermal modules, and pressure is

applied to the O-ring using dogleg features. Applicant further argued that in order to adequately seal between the second thermal modules, the second thermal modules are made of a material with sufficient strength and rigidity that the dogleg features can maintain good compression on the O-ring.

The examiner respectfully disagrees. Bifurcation of block 3 bifurcates the block 3 into 2 portions and the dog leg feature is utilized in order to connect these two portions (see [0011]) ("Cold block 3 is bifurcated in the middle and has a dog leg feature that keeps adjacent blocks connected..."). However, this does not imply that the block is rigid. The dog leg feature is merely utilized in order to connect the adjacent blocks.

### **Conclusion**

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

**Correspondence/Contact Information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571) 270-5268. The examiner can normally be reached on M-Th, 0800-1830 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ALEXA NECKEL can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/G. M./  
Examiner, Art Unit 1723

/Alexa D. Neckel/  
Supervisory Patent Examiner, Art Unit 1723